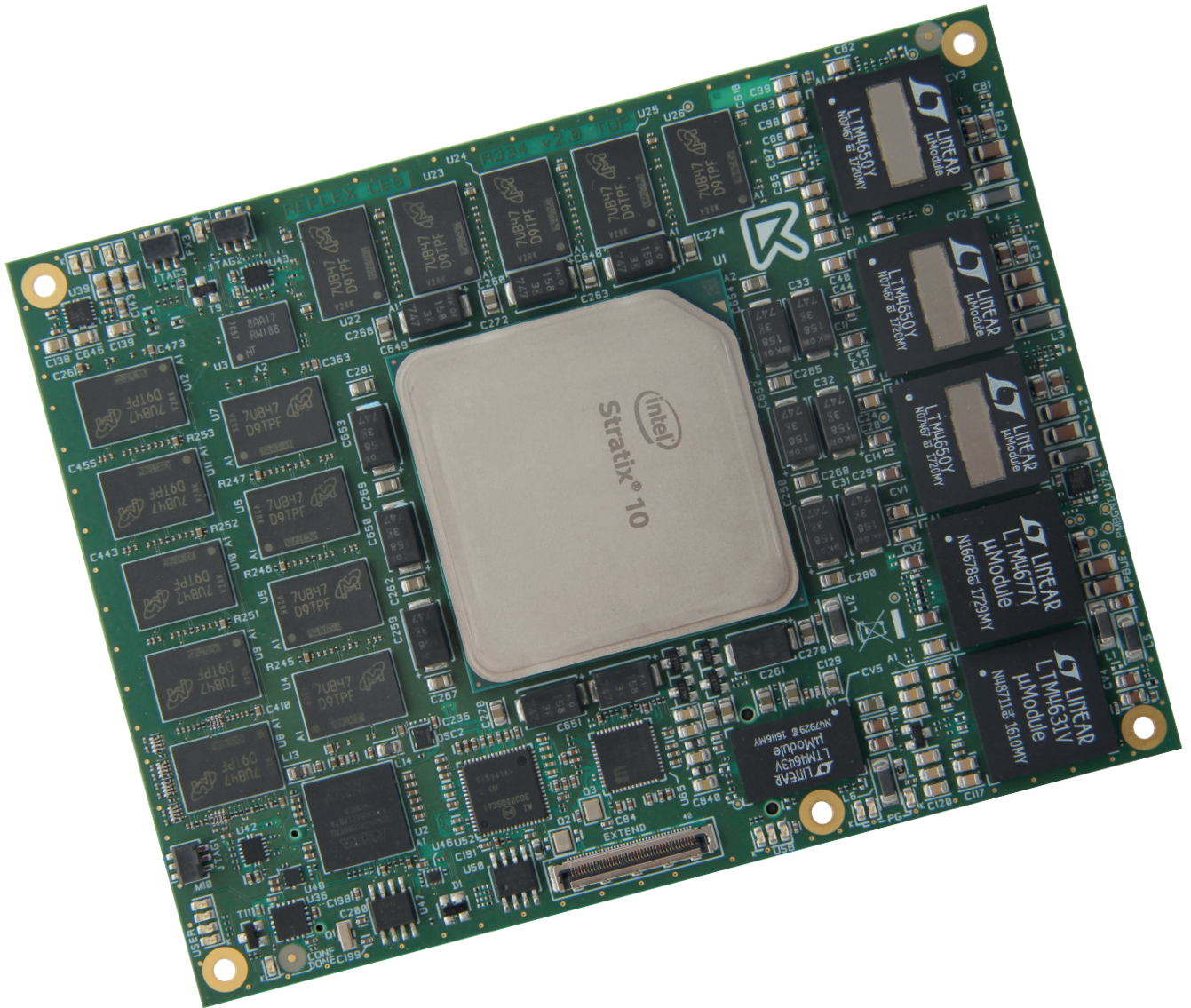




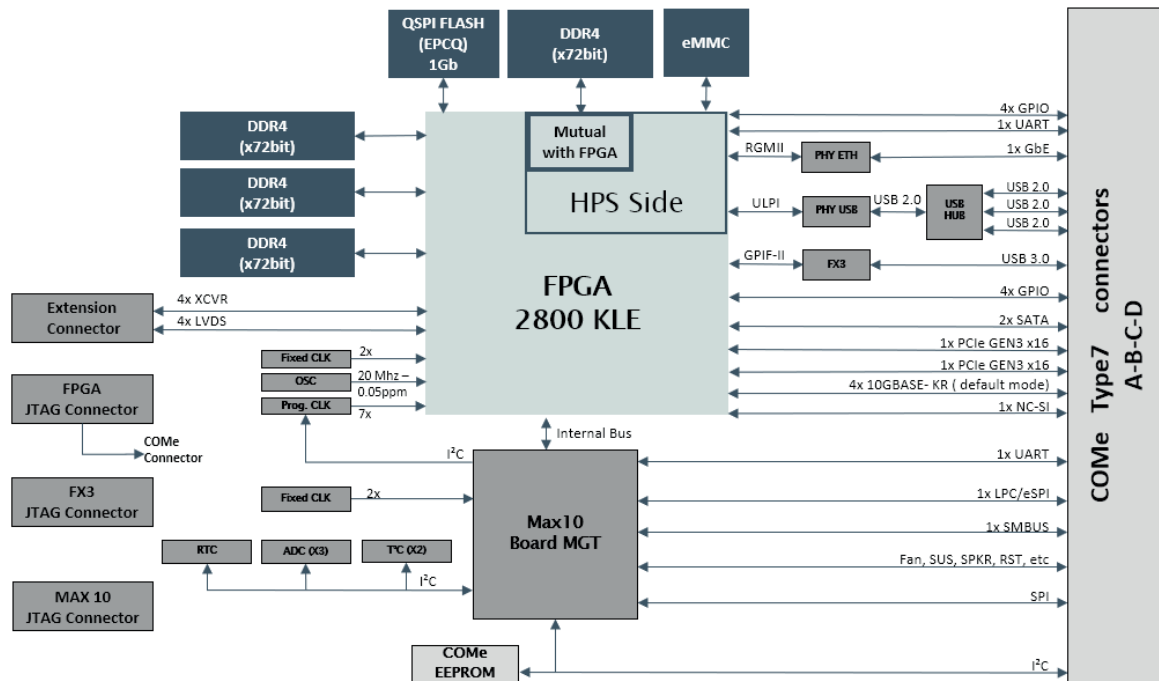
# COMXpress Stratix® 10 SoC



Intel® Stratix® 10 SX  
2800 KLE  
COM Express Basic form  
factor module, Type 7

- 32 PCI Express lanes
- 4x DDR4 up to 56GBytes total
- IO and Transceiver extension connector

- Artificial Intelligence
- High Performance Computing



## Full Specifications

### FPGA Configuration

- Stratix® 10 SX with ARMV8 (Integrated quad-core 64 bit ARM CortexA53 hard processor system up to 1.5 GHz embedded)
- MAX® 10 CPLD with board management control
- JTAG connector for external USB cable
- eMMC 32GBytes (HPS) / with U-boot, Linux kernel & Rootfs
- Nor Flash for quad SPI (x4) FPGA configuration mode

### Memory

- 4 memory banks on board DDR4:
  - Total 56GB + EC

### Power

- +12V primary power supply input, 120W max
- +5V standby and 3.3V RTC power supply inputs

### Operating Range

0°C to 40°C

### Storage Temp Range

0°C to 70°C

### Board Dimensions

- Length : 125mm (4.92inches)    Width : 95mm (3.74 inches)
- Height (without heatsink) :
  - 11.91mm (with 5mm Standoffs)
  - 14.91mm (with 8mm Standoffs)

### Board Management Controller

- FPGA monitoring
- NOR Flash and clock programming

### Communication Interfaces

- Ethernet 10/100/1000 Base-T (HPS)
- 4x 10GbE base KR (default)
- 2x Serial SATA revision 3.0, 6Gb/s
- 4x XCVR lane connected to extension connector (Display Port/SDI capable)
- 3x USB2.0 HOST    1x USB3.0    1x SMB,I<sup>2</sup>C,UART
- 8 GPIOs (4 FPGA + 4 HPS)
- 2x PCI Express x16 (Gen 1, 2 or 3) end-point supported
- eSPI interface multiplexed over Intel Low Pin Count (LPC) Interface
- Network Controller Sideband Interface (NC-SI) supported (and optional)

### Other Resources

- Extension connector : Interfaces (4x transceivers Rx/Tx and 4x LVDS interface)
- Programmable PLL (Si5341), output clocks frequency 0.0001MHz to 750MHz
- High precision on board oscillator, clock accuracy 20MHz-0.05ppm for Precision Time Protocol (PTP) IEEE 1588

### SDK & Toolkit

The REFLEX CES Toolkit is provided with every board purchased, to be a link between the REFLEX CES board and the host system. It is a suite of software development tools, including drivers, libraries, utilities and example projects.

### Standards and Compliance

- RoHS/REACH compliant
- UL certified
- ISO9001 certified

## Deliverables

- Stratix® 10 SX COME Basic module type 7
- Delivered with a custom heatsink
- Board Support Package (Reference Manual, Design Carrier Guideline, HDL reference designs, Connectors to FPGA pin assignments)
- 3D Mechanical files (under request)
- Kernel Linux support, U-boot bootloader and comprehensive user documentation
- JTAG adapter cable for external USB blaster probe.
- Evaluation PCIe Carrier Board available (upon request)
- Online support at support.reflexces.com

## Ordering information

Version	Part number	Comments
Turbo version	COMXpressSXS10L-2800T	Intel® Stratix® 10 SoC (1SX280LN3F43E2VG) / 2800 KLE FPGA On-board 56GB DDR4 + ECC [3x banks 16GB + ECC, x72bit @2400MT/s (FPGA) + 1x bank 8GB + ECC, x72bit @2133MT/s (used by HPS), @2400MT/s (used by FPGA)]

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